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USSR MATERIALS AND MATERIALS PROCESSING EQUIPMENT

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USSR MATERIALS AND MATERIALS
PROCESSING EQUIPMENT

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I. CHEMICAL INDUSTRY

Regional Roundups

RSFSR

REFINING AND PETROCHEMICAL RESEARCH IN EASTERN SIBERIA -- Irkutsk, Vostochno-Sibirskaya Pravda, 6 Jan 60

Th 1960 plan provides for the continued rapid development of the chemical industry in Eastern Siberia. Among the enterprises under construction is the Angara Oil Refinery. Several hundred million rubles will be expended for construction of the enterprises of the Angaro-Usol'skiy chemical complex. The Biryusa Hydrolysis Plant will be reconstructed, and the Zima Hydrolysis Plant will begin production. Created in the latter part of 1959, the Institute of Organic Chemistry, of the Siberian Branch of the Academy of Sciences USSR will intensify its activity as a petrochemical synthesis and polymer chemistry research center for Siberia and the Far East.

CONSTRUCTION IN BASHKIR REGION -- Moscow, Sovetskiy Voin, No 5, Mar 60, p 14

Two chemical enterprises, a synthetic rubber plant and a chemical plant, are under construction in Sterlitamak, Bashkirskaya ASSR. The Sterlitamak Synthetic Rubber Plant will produce motor vehicle tires that will run 50 percent longer than currently produced tires. Every ton of polyvinyl choride resin produced by the chemical plant will replace 4-5 tons of lead in the cable industry.

Estonian SSR

INCREASE IN PRODUCT OUTPUT -- Tallin, Sovetskaya Estoniya, 17 Feb 60

Output of the Estonian SSR chemical industry was 20 percent greater in 1959 than in 1957. There was an increase in output of mineral fertilizers and sulfuric acid in this 2-year period. The industry organized production of waterproof glue, silica gel, and other products.

While chemical enterprises were built and remodeled at an accelerated rate in 1957 and 1958, the capital investment plan for the 2-year period was fulfilled only 94 percent.

Ukrainian SSR

OUTPUT UP, CONSTRUCTION LAG IN 1959 -- Kiev, Pravda Ukrainy, 17 Feb 60

Output of the Ukrainian SSR chemical industry was 60 percent greater in 1959 than in 1955.

The 1959 plan for capital investments in construction of chemical enterprises in the republic was fulfilled only 94 percent. The plan was fulfilled only 90 percent in the Luganskiy Sovnarkhoz.

Belorussian SSR

POTASSIUM COMBINE, REFINERY UNDER CONSTRUCTION -- Minsk, Sovetskaya Belorussiya, 18 Feb 60

Only slightly developed until recent times, the Belorussian SSR chemical industry has expanded considerably in the past 4 years; its output was 1.8 times as great in 1959 as in 1955.

The Soligorsk Potassium Combine is being built on the basis of the Starobin potassium salts deposits. All measures are being taken to assure fertilizer output by the combine in 1961. Construction of the Polotsk Oil Refinery has also begun. However, many problems remain to be solved at these construction sites.

Completion of a natural gas pipeline from the Ukraine in 1961 and operation of the potassium combine and refinery will promote considerably the development of the republic's chemical industry.

Azerbaijdzhan SSR

CONSIDERABLE OUTPUT RISE IN 20 YEARS -- Baku, Bakinskiy Rabochiy, 17 Feb 60

Total output by the enterprises of the Azerbaydzhan SSR chemical industry was 19 percent greater in 1959 than in 1958.

Baku, Bakinskiy Rabochiy, 10 Mar 60

Total output of the Azerbaydzhan SSR chemical industry has risen to 24.5 times the 1940 figure.

Kazakh SSR

SPOTTY RESULTS DIM DEVELOPMENT PROSPECTS -- Alma-Ata, Kazakhstanskaya Pravda, 11 Mar 60

Even though Kazakhstan has a broad raw material base for the development of a chemical industry, at present this industry consists of only a few enterprises: the Karaganda Synthetic Rubber Plant, the Aktyubinsk Chemical Combine, the Kara-Tau Mineral Chemical Combine, the Dzhambul Superphosphate Plant, and several other enterprises and shops.

The Kazakh SSR chemical industry has been fulfilling the production plan except for the output of calcium carbide. In 1959, the Karagandinskiy Sovnarkhoz was responsible for failure to fulfill the calcium carbide production plan. The plan for construction of chemical industry enterprises has consistently failed to be fulfilled in Karagandinskaya, Dzhambulskaya, Gur'yevskaya, and Aktyubinskaya oblasts. For example, construction of the Temir-Tau Synthetic Rubber Plant was begun in 1940; thus far, only calcium carbide and acetic acid shops have gone into operation.

Construction of the Kara-Tau Mineral Chemical Combine, Dzhambulskaya Oblast, is proceeding very slowly, resulting in a delay in the supply of large amounts of phosphate fertilizer, and the republic is obliged to import mineral fertilizers from Nizhniy Tagil, Kemerovo, Magnitogorsk, and Solikamsk.

In 1960, the Gur'yevskiy, Aktyubinskiy, Karagandinskiy, and Vostochno-Kazakhstanskiy sovnarkhozes must overcome the delay in getting chemical industry production capacity into operation.

Turkmen SSR

RISE NOTED OVER 2 YEARS AGO -- Ashkhabad, Turkmenenskaya Iskra, 17 Feb 60

Total output of the Turkmen SSR chemical industry was twice as great in 1959 as in 1957. In the 2-year period, production of sulfur increased 38.6 percent, sodium sulfate 19 percent, iodine 13.4 percent, and bromine 12 percent.

Rubber and Rubber Products

TECHNOLOGICAL TROUBLE AT SUMGAI T PLANT -- Baku, Bakinskiy Rabochiy,
17 Feb 60

CPYRGHT

The Azerbaydzhan Sovnarkhoz and the Administration of Petroleum Refining and Chemical Industry must pay particular attention to the operation of the Sumgait Synthetic Rubber Plant, which experienced serious technological trouble in 1959. It failed to produce thousands of tons of rubber and alcohol and incurred 39 million rubles in losses; as a result, the Administration of Petroleum Refining and Chemical Industry had a 21.4 million ruble rise in costs for its output as a whole.

Instead of taking measures designed to fulfill the plan, Director Guseynov and Chief Engineer Akhmedov made excuses. The Central Committee of the Communist Party of Azerbaydzhan has reminded these officials of their responsibilities for the state of affairs at the plant and expects that they will soon correct the situation which has developed there.

EQUIPMENT DELIVERIES SLOW KUYBYSHEV PLANT COMPLETION -- Moscow,
Promyshlennno-Ekonomicheskaya Gazeta, 2 Mar 60

CPYRGHT

The Kuybyshev Synthetic Rubber Plant is scheduled to begin production in 1960. The production buildings have been basically completed. The construction project is well supplied with materials and machines. Almost all technical documents have been prepared. However, installation of equipment is going slowly and installation of underground communications is lagging.

In 1959, the plant received only about half of the equipment planned for delivery. The Kazan' Compressor Plant delayed production of three turbocompressors and Soyuzglavkhimkomplekt [All-Union Main Administration for Chemical Industry Equipment?] did not direct the order to another supplier so that punctual delivery could be made. The Podol'sk Plant imeni Ordzhonikidze was to produce two converters for the butane dehydrogenation shop, but there is reason for anxiety about delivery of this equipment. At least 6 months will be required for production and installation of the converters, but at best, metal for them was not to be received before March 1960.

The Stavropol' TETs (Heat and Electric Power Station), which is under construction, is scheduled to supply steam for the operation of the synthetic rubber plant. However, it is being built very slowly. If the rubber plant is to be operating normally in the 1960/1961 fall-winter period, the second boiler must be in operation by at least October 1960, but delivery of the boiler is not scheduled until the third quarter of 1960.

CPYRGHT

Work at the new Kuybyshev Synthetic Alcohol Plant, which will supply the rubber plant with methyl styrene, is also going slowly. There is doubt that its methyl styrene shops will go into operation on schedule.

LENINGRAD PLANT UNVEILS NEW TIRE -- Leningradskaya Pravda, 10 Mar 60

The Leningrad Tire Plant has produced a new tire which will have a 10-percent longer life than tires produced thus far. The new tire is intended for use on trailers and agricultural machines. Viscose cord is used instead of cotton cord in the new tire.

WHITE CARBON BLACK SUBSTITUTE -- Moscow, Pravda, 16 Mar 60

The Vinnitsa Superphosphate Plant has mastered production of "belaks," a substitute for white carbon black. The new product will be used in the production of microporous rubber and will find wide application in the footwear industry.

Chemical Fibers and Plastics

GLASS FIBER DEVELOPED IN ARMENIA -- Stalinabad, Kommunist Tadzhikistana, 26 Feb 60

Armenian chemists under the supervision of Manvel Manvelyan, Corresponding Member of the Academy of Sciences Armenian SSR, have succeeded in obtaining glass fiber from tuff, quartzite, pumice sand, and obsidian.

A method has also been found to obtain white and colored glass fiber from Yerevantite, a new chemical produced from nepheline syenite. Production of glass fiber by the method proposed by the Armenian chemists will not require the use of costly aluminum and magnesium oxides.

The new glass fibers may be widely used in the electrical and motor vehicle industries, in construction, and in the production of yarn.

CONSTRUCTION DIFFICULTIES DISCUSSED -- Moscow, Stroitel'naya Gazeta, 20 Mar 60

Completion of the capron building at the Barnaul Artificial Fiber Plant will add considerably to the USSR's capron production capacity. Construction of the building has been basically completed and equipment

is being installed. In the shops which the building will house and which will contain almost 90,000 sq m of space, it will be necessary to install about 2,000 machines and sets of equipment, 250 km of tubing, and 600 km of cable.

The designers of the enterprise were concerned with creating good working conditions in the capron building. Soundproofing panels were installed to reduce noise from the machines. A uniform temperature will be assured by the installation of air conditioners with a displacement of 120,000 cu m per hour. These air conditioners are not yet actually being produced by USSR industry; the technical documents were worked out only at the end of 1959; but workers of the Barnaul Administration of Vostoktekhmontazh [Eastern Technical Equipment Installation?] Trust organized output of these powerful air conditioners in their shops; and now the 120,000-cu m air conditioners are being built in these machine shops.

Besides the general contractor, 11 specialized organizations of the Ministry of Construction RSFSR are active on the construction site. For general supervision over their activities and coordination of all work, especially installation operations, the Altayskiy Council of the National Economy formed an over-all supervisory group headed by P. Mikhlin. A result of this action has been that, despite the severe Siberian weather, the plan for the first 2 months of 1960 has been exceeded.

Delays in equipment delivery prevent even more favorable progress. The principal delinquents are the Moscow Santekhdetal' Plant and the Penza Chemical Machinery Plant. There has also been patient waiting for Giprov [State Institute for the Planning of Synthetic Fiber Enterprises] to supply technical documents for installation of control and measuring instruments and automatics.

According to plan, many production facilities of the Barnaul plant for chemical fibers are to go into operation in the second and third quarters of 1960, but much of the material and tubing for them has been ordered for delivery toward the end of the year.

Some of the equipment is being installed with the participation of representatives of foreign firms. The installation workers are successfully meeting the schedules set by the foreign equipment suppliers. But in some cases, domestic plants are supplying tubing, stainless steel electrodes, and other materials in such an irregular manner as to delay rapid installation of the equipment.

In 1959, the Ministry of Construction RSFSR designated the Barnaul construction project a model project. However, this citation did not have the result of providing the project with enough machines, welding

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equipment, or even installation workers. No one in the ministry is disturbed that there is little application of modern technology at the construction site.

The builders and installers of the Barnaul plant have pledged to get the first stage into operation in July 1960. This date should also be kept in mind by the equipment suppliers, designers, and the Ministry of Construction RSFSR.

CAPRON OUTPUT ORGANIZED -- Moscow, Sovetskaya Rossiya, 17 Mar 60

Production of capron from the plant's own raw material is being organized at the Engel's Artificial and Synthetic Fiber Plant. The plant will attain full capacity operation in 1960.

ARTIFICIAL FUR IN SEVERAL COLORS -- Moscow, Trud, 2 Mar 60

The Moscow Silk Fabric Combine imeni Shcherbakov has begun production of artificial fur from synthetic fiber. The plant has pledged to put out in 1960 a total of 350,000 meters of white, black, gray, and blue artificial fur.

QUEST TO SATISFY POLYMER NEEDS -- Moscow, Pravda, 15 Mar 60

There are two ways to meet the constantly growing needs for polymer materials. One, which at first glance appears to be the simplest and most natural, is to create new polymer substances. Almost all researchers are concerned with this method.

On the other hand, there are great potentialities for improving the quality of existing polymer substances that are already being produced by industry. Sometimes such significant improvements can be made in these materials that they are again able to compete successfully with more recently developed products.

[Full text of this long article by Academician V. Kargin and others appears in the Daily Review of the Soviet Press, Vol VI, No 64, Part II, 16 March 1960.]

NEW LABORATORY IN TALLIN -- Tallin, Sovetskaya Estoniya, 26 Feb 60

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A polymer synthesis laboratory began operation at the Tallin Polytechnic Institute in 1959. The principal problem to be solved by the new laboratory will be the production of synthetic products from materials, particularly phenols, obtained by thermal decomposition of shale. Mostly young specialists are working in this laboratory.

PLASTICS PLANT BEGINS OUTPUT -- Moscow, Promyshlenno-Ekonomicheskaya Gazeta, 11 Mar 60

CPYRGHT

A plastics plant has gone into operation in Stalino. The first tons of polyvinyl chloride, raw material for plastics production, have been produced. A phthalic anhydride and a dibutyl phthalate shop will go into operation the second quarter of 1960.

Sulfuric Acid

SMELTER FUMES TO BE PROCESSED -- Moscow, Leninskoye Znamya, 12 Mar 60

CPYRGHT

Sulfuric acid is necessary for the production of artificial fibers, fertilizers, and many other chemical products. White domestic sulfur deposits are the normal sources of sulfur, the sulfur content of USSR sulfur ores is not great and production costs are high.

Nonferrous metallurgical smelter fumes contain a considerable amount of sulfur. Four Moscow institutes, Giprotsvetmetobrabotka [State Scientific Research and Planning Institute for the Working of Nonferrous Metals], Giprokhim [State Institute for the Planning of Chemical Industry Enterprises], NIUIF (Scientific Research Institute for Fertilizers, Insecticides, and Fungicides), and Gosgorkhimproyekt [State Trust for Planning Mineral Chemical Enterprises], have pointed out that proper utilization of nonferrous metallurgical industry waste materials would relieve the pressure for construction of sulfur mine complexes. It has been established that sulfur content in copper, lead, and zinc ores is twice as great as in domestic sulfur ores.

The scientists proposed that shops operating exclusively on local waste materials be established at nonferrous metallurgical enterprises, suggesting that the cost per ton of product from these shops would be only one fourth the usual cost.

Gosplan [State Planning Committee] the GNTK [State Scientific and Technical Committee] of the Council of Ministers USSR approved the proposal, and construction of the new shops is under way at the metallurgical plants.

Alcohol

SECOND STAGE PROGRESS SLOW -- Moscow, Promyshlennno-Ekonomicheskaya
Gazeta, 21 Feb 60

The second stage of the Kuybyshev Synthetic Alcohol Plant is scheduled to go into operation in 1960 and to begin the production of phenol, acetone, and methyl styrene in the fourth quarter.

However, progress is slow. In 1959, Construction Trust No 25 of the Kuybyshevskiy Sovnarkhoz fulfilled the construction and installation plan only 52 percent. In 1959, more than 25 million rubles' worth of ordered equipment was delivered to the site, but less than one third of it was installed, and about 18 million rubles' worth of equipment is in storage or is lying in the construction area.

For example, almost all equipment for the gas separation shop has arrived but none of it has been installed. Equipment on hand for the dehydrogenation shop cannot be installed because the roof has not yet been put on the building in which the shop will be located.

There are also deficiencies of another kind. Some buildings have almost been completed but equipment for the shops which they will house has not arrived. Among the delinquent suppliers are many plants in the Kuybyshevskiy Economic Region. The Stavropol' Volgotsemyazhmash Plant, Syzran' Heavy Machine Building Plant, and other plants are late in delivering 90 units of chemical equipment.

Fertilizers and Pesticides

RAW MATERIAL RESOURCES FOR FERTILIZERS -- Moscow, Izvestiya, 17 Mar 60

The USSR has the following established raw material resources for the production of mineral fertilizers: 1,607,000,000 tons of apatites, 2,015,000,000 tons of phosphorites, and 6,511,000,000 tons of potassium salts. At the present rate of exploitation, these resources are sufficient to supply the Soviet Union with mineral fertilizers for centuries. The apatites will last for 200 years, the phosphorites for 500 years, and the potassium salts for 900 years.

(Source contains additional information on these resources.)

GOOD RETURN ON USE OF PESTICIDES -- Kiev, Pravda Ukrainy, 17 Feb 60

CPYRGHT

To increase agricultural production, the CPSU and Soviet government have decided on a considerable increase in output of chemical agents to combat plant pests and diseases in the period 1960-1965. This program will have great significance because every ruble spent for the protection of plants by chemical means will return an average of 11 rubles, in terms of the harvest.

Detergents

REFINERY GETS BIG ORDERS FOR SULFANOL -- Moscow, Promyshlenno-Ekonomicheskaya Gazeta, 19 Feb 60

CPYRGHT

More than 150 organizations from 70 economic regions of the USSR have sent the Krasnovodsk Oil Refinery orders for its powdered sulfanol, a detergent. The first six carloads of this product have been shipped. The sulfanol shop workers are continuing to perfect the difficult technological process; they have pledged to expand production in the first quarter of 1960 and to be producing two types of powdered detergents by the end of the quarter.

Sulfanol is used not merely to wash fabrics but also to clean the compartments of tankers; it will also be used in the concentrating of ores.

Paints and Varnishes

COMMISSION TO DEVELOP NEW COATINGS -- Moscow, Promyshlenno-Ekonomicheskaya Gazeta, 17 Feb 60

CPYRGHT

The State Scientific and Technical Committee of the Council of Ministers USSR has created a commission which will have the task of developing new paints and varnishes from synthetic raw materials. The commission will also recommend measures to the industry for the production and utilization of the new products and will suggest that production of some old types of paints and varnishes be discontinued.

Assigned to the commission will be many specialists from the motor vehicle, machine building, shipbuilding, agricultural machinery, and furniture industries, also railroad, urban transport, and construction experts, and chemists with experience in the field of producing paints and varnishes from synthetic raw materials.

Rosin and Turpentine

INCREASED ROSIN DEMAND ANTICIPATED -- Moscow, Promyshlennno-Ekonomicheskaya Gazeta, 17 Feb 60

The State Scientific and Technical Committee of the Council of Ministers RSFSR (GNTK RSFSR) has analyzed the problem of increasing the production of rosin, which is needed in considerable quantities by the chemical, paper, and soap industries.

Tulyakov, director of the Central Scientific Research Wood-Chemical Institute (TsNILKhl), who is chairman of the temporary commission set up by State Scientific and Technical Committee, stated that because of increased requirements for rosin for paper and cardboard output and also because of the use of rosin as an emulsifying agent in the production of butadiene styrene synthetic rubber, demand for rosin will be 90 percent greater in 1965 and in 1958 and that the demand will exceed the supply by 36,000 tons.

The committee has approved the work of the temporary commission and has recommended that 1965 rosin production be increased by 38,000 tons over the control figure in the Seven-Year Plan but without any additional capital investment.

PEAT STUMPS SUGGESTED AS SOURCE OF ROSIN, TURPENTINE -- Vil'nyus, Sovetskaya Litva, 10 Mar 60

Such chemical products as turpentine, rosin, tar, and charcoal, all of which are widely used in the Lithuanian SSR economy, are usually produced by processing tree stumps at turpentine and tar enterprises of the republic.

To obtain the above chemical products, tens of thousands of cu m of tree stumps are used annually in the Lithuanian SSR. Despite the high cost of their procurement (35-40 rubles per cu m) and additional costs for their transportation to turpentine and tar enterprises, the value of the chemical products obtained per cu m of tree stumps exceeds 200 rubles, or five to six times the cost of the raw material.

Besides ordinary tree stumps, another source of raw material is the stumps of various kinds of trees (mostly coniferous) uncovered in peat extraction operations and those grubbed out of agricultural fields.

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It has been estimated that in 1959 about 80,000 cu m of tree stumps were uncovered at the peat enterprises of the republic. The 1960 plan provides for uncovering 38,000 cu m of stumps at three peat enterprises alone. The cost of procuring these stumps is only 9-10 rubles per cu m. In the past, these stumps have been used only as fuel.

A cu m of tree stumps from a peat deposit will yield as much as 12-15 kg of tar, 5-7 kg of turpentine, and 60 kg of charcoal. Turpentine content of a peat bog stump is almost equal to that of a regular tree stump.

The equipment needed for dry distillation of the stumps is simple and could easily be manufactured in republic plants. Whenever possible, peat bog stumps should be processed at turpentine and tar enterprises and forestry management wood-chemical enterprises.

Drugs

NEW CAFFEINE SHOP -- Moscow, Promyshlennno-Ekonomicheskaya Gazeta, 16 Mar 60

A new, fully mechanized and partially automated shop for the production of natural caffeine has gone into operation at the Batumi Caffeine Plant. With the addition of this shop, productivity of the enterprise has more than doubled.

The plant uses cheap raw material, the waste materials from tea plantations and tea factories, and produces, in addition to natural caffeine, such other medicinal products as sesame oil, aloe solution and emulsion, and colchicine.

Chemical Equipment

SNAGS IN PRODUCTION -- Moscow, Promyshlennno-Ekonomicheskaya Gazeta, 23 Dec 59

In April 1958, the Gubakha Chemical Plant placed an order with the Balashikha Plant imeni 40-Letiye Oktyabrya (V. G. Golyakov, director) for two air precooling units which were to be produced during the third quarter of 1958. After numerous pleas, reminders, and petitions, the Balashikha plant produced and painted the units, and shipped them to another consumer.

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Rosglavmashsnabsbyt [Main Administration for Supply and Sale of Machinery RSFSR?], attached to Gosplan RSFSR, issued an order to the Tikhoretsk Krasnyy Molot Plant (A. V. Abubakirov, director) for the production of two more of these units during the third quarter of 1959, but no units have yet been made.

PRODUCES COMPLEX EQUIPMENT -- Moscow, Promyshlenno-Ekonomicheskaya Gazeta, 7 Feb 60

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Orders for extremely complex equipment are usually given to the Tambov Komsomolets Plant, because consumers in Saratov, Klin, Dneprodzerzhinsk, Stalinogorsk, Mytishchi, and Gorlovka are very satisfied with the equipment produced by this plant.

EXPORT FORCE PUMPS TO CHINA -- Moscow, Promyshlenno-Ekonomicheskaya Gazeta, 12 Feb 60

CPYRGHT

The Khabarovsk Energomash Plant has sent to China two new types of force pumps which are more powerful than previously made models.

PRODUCTION IN UZBEK SSR -- Tashkent, Pravda Vostoka, 27 Jan 60

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In 1959, the Uzbek SSR produced 83.5 million rubles' worth of chemical equipment.

II. PETROLEUM AND GAS

Regional Roundups

USSR

SOVIETS TO EXPAND ALL PHASES OF ACTIVITY IN OIL AND GAS INDUSTRIES IN 1960 -- Moscow, Promyshlennno-Ekonomicheskaya Gazeta, 3 Feb 60

According to V. Kalamkarov, chief of the Division of Oil and Gas Industry of Gosplan USSR, the Soviets plan to drill 8.4 million meters of oil and gas wells in 1960, in comparison with about 7.5 million meters of wells drilled in 1959. Some 2,805,000 meters of slim holes are planned. About 70 percent of the total drilling scheduled for 1960 is slated to take place in the RSFSR.

Of the total drilling scheduled for 1960 in the USSR, more than 55 percent is to be exploration, in comparison with more than 50 percent in 1959, when exploratory drilling increased 15 percent over the 1958 level and for the first time accounted for more than half the total drilling in the USSR.

In 1959, about 100 oil and gas fields and pools were discovered throughout the USSR, more than 30 of them in the northern part of the Nashkirskaya ASSR alone. The first natural gas deposits in the republic, the Kanchurinskiy, Musinskiy, and Mayachnyy, were discovered in the south-eastern part near Meleuz.

In 1960, Soviet crude oil production is expected to rise to 144 million tons, as against the 129.5 million tons produced in 1959, when production topped the year's goal by 1.7 million tons. More than 40 million tons of the 1959 output resulted from water pressuring. In the same year, the Soviets injected 163 million cu of water into the oil producing formations. Every large oil field in the USSR is now being developed by maintaining proper strata pressure.

The output of gas through extraction and production is slated to increase from 37.2 billion cu m in 1959 to 53.2 billion cu m in 1960.

About 4,000 km of gas lines are to be built and placed in service in 1960 as compared with 3,700 km in 1959. More than 2,100 km of crude oil and petroleum product lines are also to be placed in service, as compared with more than 2,000 km in 1959. New natural gasoline plants

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to process casing-head gas are to be built in the principal oil producing regions, particularly in the Tatarskaya and Bashkirskaya ASSRs and Kuybyshevskaya Oblast. The primary distillation, cracking, coking, and lube oil producing units slated to go on stream in 1960 are to be of larger capacity than those placed in service in 1959.

Bashkirskaya ASSR

NEW GAS FIELD NEAR KUMERTAU IN NASHKIRIYA -- Moscow, Komsomol'skaya Pravda, 9 Mar 60

Ufa -- Gas wells are being prepared for commercial development at a new gas field which has been established on the sites of four gas deposits which were discovered near the city of Kumertau. These are the huge Kanchurinskiy, Musinskiy, and Mayachnyy deposits found in 1959, and the Alakayevskiy deposits found in early 1960.

Azerbaydzhan SSR

WIDESPREAD USE OF AUTOMATION IN OIL PRODUCTION PLANNED IN AZERBAYDZHAN -- Moscow, Neftyanoye Khozyaystvo, No 2, Feb 60, pp 7-12

The Seven-Year Plan calls for the extraction of 22 million tons of crude oil and 11.6 cu m of gas in 1965 in Azerbaydzhan.

In 1960, oil production is expected to increase 765,000 tons over 1959, when it increased about 600,000 tons over the 1958 level.

[Comment: The republic's 1960 production goals have been set at 17,765,000 tons of oil and 6.2 billion cu m of gas indicates expected increases of 4.2 percent for oil and 28 percent for gas over 1959 outputs. Some 930,000 meters of oil and gas wells are to be drilled during the year. However, the annual drilling goals were not fulfilled during 1955-1959.]

In 1961, oil production is expected to increase 800,000 tons, and in 1962, 900,000 tons. From 1963, oil output is expected to increase at the rate of one million tons annually.

During 1952-1958 oil production in Azerbaydzhan increased 260,000 tons, and gas output 3 billion cu m.

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Of the republic's producing oil wells, 86.5 percent are worked by means of deep well pumps and account for 52 percent of the [USSR] oil production. Flowing wells account for 37.5 percent of the oil output in comparison with 18.1 percent in 1955. Electric centrifugal pumps are used quite effectively in 52 oil wells. A total of 958 compressor wells operate automatically.

The Seven-Year Plan calls for the widespread introduction of automation in oil production. By the end of 1965, the operations of 9,000 oil wells are to be controlled and regulated automatically; 2,000 pumping wells are to be converted to automatic, periodic operations. Some 9,000 wells are to be equipped with automatic well output measuring devices. Air transmission in compressor well operations is to be automated.

Ukrainian SSR

OIL OUTPUT IN UKRAINE MAY REACH 40-50 MILLION TONS IN 1975 -- Moscow, Neftyanoye Khozyaystvo, No 1, Jan 60, pp 27-30

Annual oil output in the Ukraine may very possibly rise to 40-50 million tons in 1975, according to the latest data. The potential growth of oil and gas output is much greater than had been anticipated in the Seven-Year Plan. In 1959, oil production was 32 percent higher and gas output 22 percent higher than in 1958.

The latest estimates of probable oil and gas reserves in the Ukraine indicate much larger reserves than previously estimated. About 65 percent of the republic's probable oil and gas reserves lies in the Dnepr-Donets Basin, while about 25 percent lies in the Carpathian Mountain foothills.

If the Ukraine's oil and gas production rises at the rapid rate anticipated, the republic's 1975 fuel balance will change substantially. The proportion of oil and gas will rise to 50 percent of the 1975 fuel balance, as against a planned 20 percent in 1965 and an actual 8.3 percent in 1958.

The increased output of oil in 1959 resulted primarily from the development of the Dolina and Bitkovo oil fields in Stanislavskaya Oblast. The increased output of gas resulted primarily from the development of the huge Shebelinka Gas Field in Khar'kovskaya Oblast in the eastern Ukraine, although the Bil'che-Volitsa, Ugersko, and Rudki fields in the western part of the republic also account for a large quantity of gas produced in the Ukraine.

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In 1959 drilling, about 75 percent of it exploratory, had increased more than 40 percent over the 1958 total.

The republic's oil refineries all surpassed their 1959 goals for the refining of crude oil and for the production of all sorts of petroleum products. The volume of oil refining increased 22 percent over the 1958 level. There was also a 22-percent increase in refining capacity as a result of the reconstruction of existing oil refineries. Despite these advancements, there was no significant improvement in the technology of refining, and the plants continue to produce low-grade petroleum products.

The Ukraine's present consumption of petroleum products is equivalent to about 12 percent of the output of such products in the Soviet Union. Most of these products must be brought into the Ukraine from other republics, which is both expensive for the national economy and a burden on the railroads due to overloading.

Uzbek SSR

UZBEK OIL AND GAS INDUSTRIES TO GROW RAPIDLY DURING 1959-1965 -- Moscow, Neftyanoye Khozyaystvo, No 2, Feb 60, pp 12-18

Under the Seven-Year Plan, Uzbekistan is expected to produce 3 million tons of crude oil and 18.3 billion cu m of gas, or 2.3 times the crude oil and nearly 150 times the gas it produced in 1958. It is expected to account for 5.5 percent of the 1965 Soviet oil and gas output, as against the one percent it supplied in 1958.

A total of 6,525 km of major gas lines, 23 percent of that slated throughout the USSR during 1959-1965, are scheduled for construction in Uzbekistan during this period.

Gas consumption in 1965 is expected to rise to 6 billion cu m, equal in heat value to 15 million tons of coal of the Angren coal basin, which now produces 3.5 million tons per year. Under the Seven-Year Plan, the republic's fuel requirements in 1965 are to be supplied primarily by gas, as shown below (in percent):

<u>Type fuel</u>	<u>1958</u>	<u>1965</u>
Gas	3.3	60.0
Coal	77.3	23.7
Petroleum products	19.4	16.3

All the crude oil that is to be produced in Uzbekistan will be refined there. One of its refineries will also produce lube oils, and in the next several years, Uzbekistan will be able to discontinue its import of all types of petroleum products.

The republic's oil and gas fields, both the known deposits and those under exploration, are all located in three geologically independent regions, of which two, Fergana and Surkhan-Dar'ya, are crude oil and casing-head gas producers, and the third, Bukhara-Khiva, is a gas condensate producer.

Since the Fergana region, the oldest of the three regions, has been in existence, 28 oil fields, most of them in the Paleogenic sediments and some of them already depleted, have been discovered there. Although there are no natural gas fields in this region, there are gas pools or gas caps in some of the oil fields. A considerable quantity of casing-head gas, about 50 percent of which is used exclusively as fuel, is extracted along with the crude oil.

The expansion of the Fergana region depends on the results of exploration of the deep-seated structures in which the possible production strata may lie at depths of 4,000-5,000 meters. In 1959, the first wells, projected to depths of 4,000 meters, were sunk at Namangan.

Although commercial oil was discovered in Surkhan-Dar'inskaya Oblast in 1935, geological information regarding this region is inadequate. Little is known about the Cretaceous and Jurassic formations that lie 3,000-5,000 meters beneath the surface. These formations were not explored previously because of the lack of necessary machinery in Uzbekistan, even though they have produced commercial oil and gas in neighboring regions.

In 1959, the drilling of three test wells to the Cretaceous formations was started at the Ashirkhan, Khaudag, and Kara-Kurt structures.

Three relatively small oil fields in the Paleogenic formations are now being developed in Surkhan-Dar'inskaya Oblast. The best asphalt in the USSR is produced from this crude oil, which is heavier than the Fergana crude, contains a large quantity of sulfur, and has almost no light fractions.

In recent years, six commercially important gas fields, among them the huge Gazli field (the largest natural gas field in the USSR), have been found in the Cretaceous sediments in the Bukhara-Khiva gas condensate regions, the newest of Uzbekistan's oil and gas regions. More than 50 promising oil and gas structures, of which 14 are now under deep exploration, have already been found through geological exploration in this region. The region's commercial gas reserves are expected to increase from about 100 billion cu m at the beginning to more than 600 billion cu m at the end of the Seven-Year Plan.

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No separate oil fields have been found yet in this region, but separate pools of light flowing oil have been found in one Cretaceous horizon at Gazli and in the Jurassic sediments at the Ak-Dzhar field. The commercial oil reserves have not yet been established at either site.

From indications, the center of Uzbekistan's oil and gas production will shift from the old Fergana region to the new Bukhara-Khiva region. The republic's three oil and gas regions compare as follows:

	<u>Fergana</u>		<u>Surkhan-Dar'ya</u>		<u>Bukhara-Khiva</u>	
	<u>1958</u>	<u>Planned 1965</u>	<u>1958</u>	<u>Planned 1965</u>	<u>1958</u>	<u>Planned 1965</u>
Commercial gas reserves (billion cu m)	7.7	25.1	1.3	6.0	100	620
Oil extraction (% of 1958)	100	181	100	133	0	50*
Gas extraction (million cu m)	125	500	1.3	2.0	1.5	17,798
Deep exploration (1,000 meters)	106.6	310	3.3	50	61	325
Development Drilling (1,000 meters)	41.5	114	3.3	40	0	90

* Compared with Fergana Region

Deep drilling is the prime factor which may determine the expansion of oil production in the Fergana region. More than 60 percent of the drilling slated for this region during 1959-1965 is to be of wells projected to depths of 3,000-5,000 meters. However, two major problems are involved: the technology of drilling wells to such depths has not yet been mastered in Uzbekistan, and the cost of producing a well that deep runs up to 4-6 million rubles. It appears that it may be more economical to fulfill Uzbekistan's oil production goal by a greater expansion of oil production in the republic's other regions.

The growth in oil production in the Surkhan-Dar'ya regions depends primarily on the results of the already-started exploration of the Cretaceous formations.

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Uzbekistan's commercial oil reserves are expected to be 6.5 times as large as gas reserves 6.8 times as large at the end of the Seven-Year Plan as at the beginning, despite the large increase planned in output during the period. The republic is expected to rank second in gas reserves in the USSR.

During the 7-year period, about 2,000 oil and gas wells, totaling about 4 million meters, are to be drilled, or nearly four times the amount drilled during the 7 years through 1958. Some 4.5 billion rubles is to be spent to expand the Uzbek oil and gas industry, or nearly 50 percent of the amount spent during 1958 for the expansion of the Soviet oil industry in general.

Uzbekistan has several "firsts" to its credit. It was first in the Soviet Union's southern regions to completely change over to turbodrilling, first in the USSR to utilize smaller-diameter development casing exclusively, first to introduce telemechanization in oil wells on a large scale, and first in the USSR to build and continue to operate a major gas line from asbestos cement pipe.

Although well depths have increased since 1955, the speed of exploratory drilling, which accounts for 75-80 percent of the total drilling in the republic, increased from 336 to 578 meters per machine month during 1955-1958.

In technical and economic drilling indexes, Uzbekistan is about on the same level with the USSR in some instances and far behind in others. The amount a crew drills annually in Uzbekistan is 25 percent below the average throughout the USSR. Preparations for drilling, especially in the new areas, are organized poorly. Some 35 percent of the over-all drilling time is spent unproductively. Drilling operations are not concentrated properly. In 1958, there were 33 deep drilling crews equipped with 48 sets of drilling units, yet the drilling took place at 26 separate, undeveloped sites far from technical bases.

Servicing, and lowering and pulling operations are mechanized poorly. In 1958, some 12.5 percent of the well drilling time was spent in eliminating breakdowns and trouble spots. Most of the breakdowns and troubles are due to difficulties with mud solution.

There are some questions that require the attention of higher-level organizations; for example, the supply of equipment necessary to raise the technical level of drilling. The plans for the introduction of new machines were not fulfilled in 1958 or in 1959, because of the lack of funds. Material shortages have also been causing shutdowns and delayed servicing operations.

The 1958 oil production indexes of Uzbekistan compare with the average indexes of the USSR that year as follows:

	<u>USSR</u>	<u>Uzbekistan</u>
Average yield per well-month in deep pumping operations (tons)	99	80.8
Annual labor productivity per worker (%)	100	50.0
Production cost per ton of oil and casing-head gas (%)	100	192.0
Manpower per well	2.16	1.33

The index for the use of manpower per well is better for Uzbekistan than the average for the USSR generally, to a considerable extent, because of the organization of labor and production, establishment of consolidated oil fields, and widespread introduction of telemechanization. Complete dispatching is employed at four of Uzbekistan's largest oil fields with about 1,000 oil wells, or nearly 50 percent of the total number of Soviet oil wells with dispatching services.

Labor productivity is lower and production costs are higher in Uzbekistan than in the USSR generally mainly because of the special characteristics involved in oil production in Uzbekistan. Some 98 percent of the republic's oil wells are deep pumpers with average daily yields of 2.7 tons.

Hydraulic fracturing of wells in Uzbekistan has not been effective so far because of the inadequate pressure developed during the fracturing process and so the significance of the operation cannot be evaluated properly.

Despite the favorable geological conditions, there is still no development of two horizons separately by means of a single well.

Both the gathering and consumption of casing-head gas are organized poorly. There are no natural gasoline units in which the casing-head gas may be used.

The gathering, storage, and preparation of crude oil at the fields before delivery to refineries are poor. The existing multipipe facilities for the gathering of crude oil and gas are not sealed sufficiently, and up to 5 percent of the crude oil is lost on its way from the oil well to the refining site. The initial preparation of crude oil before processing

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(demulsification, desalting, and dehydration) is accomplished at the fields by means of heating and settling, and by treating with neutral contact. This is done with electrodehydration units at only two fields. Often this must be repeated at the oil refineries, which results in the additional loss of light fractions as well as in excessive expense.

Many of these problems are expected to be corrected during the Seven-Year Plan. Improvements are scheduled in the technology of turbodrilling and in the use of forced drilling by the introduction of high-pressure pumps. Electrodrills, sectional turbodrills, and combined turborotary drilling are expected to be introduced. The existing outdated and worn out drilling rigs are scheduled to be replaced in the next 2 years [1960-1961]. The already-started slim hole drilling is scheduled to expand sharply. More drilling is to be done with water instead of mud, as is already being done in the Fergana valley.

It is expected that dispatching will be completed by the end of 1960 in all the existing oil and gas wells in Uzbekistan; this will provide the basis for accomplishing full automation and telemechanization in the republic's oil and gas fields within 3-4 years. Some of the oil fields are already prepared so that pilot-model enterprises may be built. The pumping of water under pressure into the strata of the oil fields is being expanded. Two oil fields produced 97,000 tons more crude oil after water pressuring was started. The injection of surplus gas into the ground to raise the oil reservoir pressure is expected to expand; moreover, the practice of gas injection is to be introduced in gas wells.

The problem of the gathering and consumption of casing-head gas is expected to be solved during the Seven-Year Plan by complete reconstruction of oil field facilities, the building of natural gasoline installations, and the injection of surplus gas into depleted reservoirs.

Labor productivity is expected to rise considerably by the introduction of power-driven units for use in the capital repair of wells, and by an entire complex of mechanisms designed to mechanize the operations when wells are placed on stream and when underground repairs are made. It is expected that labor productivity will almost double in oil production by the end of 1965 as a result of putting the planned measures into practice.

Despite the numerous difficulties involved, Uzbekistan fulfilled its 1959 goal for oil production 106.7 percent and surpassed its goal for increasing oil and gas reserves.

NEW TELEMECHANIZATION SYSTEM ENABLES ATTENDANT TO CHECK ON 500 OIL WELLS --
Riga, Sovetskaya Latvya, 10 Mar 60

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Andizhan -- The newly installed telemechanization system at the Andizhan Consolidated Oil Field enables the dispatcher on duty to control the operations of 500 oil wells at the same time, instead of 150-200 as before.

Developed by Uzbek specialists, the improved telemechanization system is being installed in other oil fields in the Fergana valley.

Fuel Supply

GAS TO FLOW FROM UKRAINE TO CITIES IN BELORUSSIA -- Moscow, Trud, 11 Feb 60

Seventeen cities, about 300 large industrial enterprises, and more than 120,000 apartments in Belorussia are slated to be placed on gas by the end of 1965. Minsk and Gomel' are scheduled to receive gas in 1960, Minsk through a line from Dashava, and Gomel' through a line from Shchors.

[Comment: The 662-km, large-pipe Dashava-Minsk gas line, which begins at Komarno northwest of Dashava in Drobychskaya Oblast of the Ukraine, is scheduled to go in service during the fourth quarter of 1960. Eventually, this line will be extended to Leningrad.

The line from Shchors, in Chernigovskaya Oblast of the Ukraine, to Gomel' is probably a branch line of the trunk line opened in 1952 from Dashava via Kiev and Bryansk to Moscow.]

SECOND CRUDE OIL LINE FROM TUYMAZY TO OMSK -- Moscow, Komsomol'skaya Pravda, 9 Jan 60

Omsk -- A second crude oil line more than 1,300 km long has been placed in service from Tuymazy to Omsk. Though of the same length as Line No 1, the newly built line has greater capacity.

Gas Storage

DEPLETED OIL RESERVOIR ON SAKHALIN ISLAND CONVERTED INTO GAS STORAGE --
Riga, Sovetskaya Latvija, 10 Mar 60

Yuzhno-Sakhalinsk -- The Okha Gas Compressor Station has converted a long-depleted oil reservoir into an underground storage facility for the summer surplus of casing-head gas produced with oil on the northern part of Sakhalin Island. During the summer of 1959, several million cubic meters of casing-head gas was injected underground. When winter arrived, the gas storage reservoir was connected to the gas distribution system of Okha and is now supplying the city with 13,000-20,000 cu m of casing-head per day.

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III. SOLID FUELS

Consumption Statistics

COAL CONSUMPTION BY DIFFERENT BRANCHES OF NATIONAL ECONOMY -- Kuznetskiy Ugol'nyy Bassey'n (The Kuznetsk Coal Basin), Handbook, Moscow, 1959, p 367

Consumption of Kuznetsk coal by USSR industries for 1956 is as follows
(in 1,000 tons):

Ferrous metallurgy	24,109.2
(coal for coking)	20,279.9
Nonferrous metallurgy	1,212.6
Coal industry	114.9
Petroleum industry	259.5
Chemical industry	469.9
Electric power stations	7,666.1
Electrical engineering industry	172.3
Radio engineering industry	197.5
Transport machine building	298.8
Motor vehicle, tractor, and agricultural machine building	447.6
Shipbuilding industry	70.6
Machine tool and tool industry	173.8
Instrument building	20.1
Construction materials industry	1,504.3
Construction industry	1,394.3
Timber and wood processing industry	152.3
Light industry	459.0

Meat and dairy industry	399.2
Food industry	1,167.0
Agriculture	337.8
Sovkhozes	368.7
Railroad transport	14,425.5
River fleet	644.4
Total consumption	60,767.2

AREA COAL CONSUMPTION -- Kuznetskiy Ugol'nyy Basseyn (The Kuznetsk Coal Basin), Handbook, Moscow, 1959, p 366

Consumption of Kuznetsk coal by various USSR republics and oblasts for 1957 is as follows (in 1,000 tons):

Vologodskaya Oblast	116.9
Voronezhskaya Oblast	884.2
Gor'kovskaya Oblast	1,842.3
Kirovskaya Oblast	131.3
Kostromskaya Oblast	0.1
Mariyskaya ASSR	85.0
Moskovskaya Oblast	827.3
Mordovskaya ASSR	1,205.1
Penzenskaya Oblast	323.5
Chuvashskaya ASSR	173.8
Tatarskaya ASSR	785.5
Kuybyshevskaya Oblast	3,263.5
Saratovskaya Oblast	37.4

Ul'yanovskaya Oblast	301.8
Bashkirskaya ASSR	1,840.6
Permskaya Oblast	728.6
Sverdlovskaya Oblast	9,824.8
Udmurtskaya ASSR	1,582.7
Chelyabinskaya Oblast	10,450.6
Orenburgskaya Oblast	1,182.2
Altayskiy Kray	1,889.6
Kemerovskaya Oblast	14,826.7
Kurganskaya Oblast	997.9
Novosibirskaya Oblast	3,683.9
Omskaya Oblast	1,386.7
Tomskaya Oblast	298.3
Tyumenskaya Oblast	1,064.0
Krasnoyarskiy Kray	61.2
Kazakh SSR	4,821.1
Kirgiz SSR	106.6
Tadzhik SSR	3.2
Turkmen SSR	7.9
Uzbek SSR	61.8
Total consumption	65,170.9

Combine Organization

CONSTITUENTS OF KUZBASSUGOL' COMBINE -- Kuznetskiy Ugol'nyy Bassey'n
(The Kuznetsk Coal Basin), Handbook, Moscow, 1959, pp 380-382

The Kuzbassugol' Combine has jurisdiction over the following trusts: the Stalinugol' and Prokop'yevskugol' trusts in Prokop'yevsk; the Kiselevskugol' Trust in Kiselevsk; the Osinnikiugol' Trust in Osinniki; the Kuybyshevugol' Trust in Stalinsk; the Leninugol' Trusts in Leninsk-Kuznetskiy; the Anzherougol' Trust in Anzhero-Sudzhensk; the Kemerovugol' Trust in Kemerovo; the Belovugol' Trust in Belovo; and the Tomusaugol' Trust in Mezhdurechensk.

The Stalinugol' Trust is made up of the following mines: Koksovaya imeni Stalin, No 3-3-bis, Koksovaya-2, Chernaya Gora, Maganak, Krasnyy, Zenkovskiye Uklony, Severnyy Maganak, and the Maganakiy open pit.

The Prokop'yevskugol' Trust is made up of the following mines: No 5-6, imeni Dzerzhinskiy, Maneikha, imeni Kalinin, Ziminka, Ziminka 3-4, Krasnogorskaya, Yuzhnaya, Tryganskiye Uklony, No 8, and the No 8 open pit. Mine No 5--6, the Mine imeni Dzerzhinskiy, and Mine imeni Kalinin, and the Ziminka and Maneikha mines have coal-preparation mills.

The Kiselevskugol' Trust is made up of the following mines: the Mine imeni Vakhrushev, No 12, No 13, No 4--6, No 5, Surtaika, Dal'niye Gory, No 7-a, No 7-b, Raybinskaya, and the open-pit mines Kiselevskiy and imeni Vakhrushev.

The Isinnikiugol' Trust is made up of the following mines: Kapital'naya-1, No 4, No 9, Kapital'naya-2, Shushtalepskaya-1, and Malinovskaya-1. The Kapital'naya-1 and Kapital'naya-2 Mine and the mine No 4 have coal-preparation mills.

The Kuybyshevugol' Trust is made up of the following mines: imeni Ordzhonikidze, imeni Dimitrov, Redakovo-Severnaya, Redakovo Yuzhnaya, Zapadnaya, Bungurskiy Shtol'ni, Baydayevskaya, Zyryanovskaya, Abashevskaya-1, Abashevskaya-2, Abashevskaya 3-4, Baydayevskiy Uklon, and the Baydayevskiy and Listvyanskiy open pits. The Baydayevskaya, Abashevskaya-1, Abashevskaya-2, and Zyryanovskaya mines have coal-preparation mills.

The Leninugol' Trust is made up of the following mines: imeni Kirov, Zhurinka-3, imeni 7 Noyabrya, imeni Yaroslavskiy, Komsomolets, Polysayevskaya-1, Polysayevskaya-2, Novaya, Zhurinka-4, Polysayevskaya-Severnaya, Polysayevskaya-3 and the Gramoteinskiy open pit. There is a coal-preparation mill at the mine imeni Kirov.

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The Anzherougol' Trust is made up of the following mines: No 5-7, No 9-15, Fizkul'turnik, No 2, and No 3. Mine No 9-15 and the Fizkul'turnik mine have coal-preparation mills.

The Kemerovugol' Trust is made up of the following mines: Tsentral'naya, Pioneer, Severnaya, Yuzhnaya, Butovskaya, Yagunovskaya, Promyshlenskaya, and the Kedrovskiy open pit. There is a coal-preparation mill at the Yagunovskaya Mine.

The Belovugol' Trust is made up of the following mines: Pionerka, Babanakovskaya, Chertinskaya 2-3, Chertinskaya-1, Chertinskaya-Yuzhnaya, Gramoteinskaya 1-2, and the Bachatskiy, Novosergiyevskiy, Svobodnyy, and Krasnobrodskiy open pits.

The Tomusaugol' Trust is made up of the Tomusinskaya 1-2 Mine and the Krasnogorskiy open pit. There is a coal preparation mill at Tomusinskaya 1-2 Mine.

The Kuzbassugleobogashcheniye Trust has coal-preparation mills at mines imeni Stalin, No 3-3 bis, Koksovaya-2, Severnyy Maganak, Krasnogorskaya and Ziminka 3-4 in Prokop'yevsk at imeni Vakhrushev and Taybinskaya in Kiselevsk and at Chertinskaya Mine in Belovo. The Central Coal Preparation Mill is located at Mine No 7--b in Kiselevsk.

COAL-PREPARATION MILLS IN KUZBASS -- Kuzbetskiy Ugol'nyy Basseyn, (Kuznetsk Coal Basin), Handbook, Moscow, 1959, pp 277, 279

As of 1957, the Kuzbass had 28 coal-preparation mills. Of these, seven had a capacity of 300,000 tons per year; 11, from 300,000 to one million tons; and 10, more than one million tons. The largest coal-preparation mill is at the Mine imeni Kirov. This mill has a capacity of 2.1 million tons per year. Next in size are the mills at Mine Ziminka 3-4 and at mine No 9-15 of the Anzherougol' Trust. Each has a capacity of 1.8 million tons per year. Following these in size are the mills at the Taybinskaya Mine and the Koksovaya Mine imeni Stalin each, with a capacity of 1.5 million tons per year.

The proportion of cleaned coal is greater in the Kuzbass than in the other basins. In 1955, 36.3 percent of the Kuzbass coal was cleaned, 26.9 percent of the Donbass coal, 25 percent of the Karaganda Basin coal, and 9.3 percent of the East Siberian coal was cleaned. The ash content of the concentrate average 10.8 percent for the USSR, 8.1 percent for the Kuzbass, 7.7 percent, 13.3 percent for the Karaganda Basin, and 15.6 percent for the East Siberian basins.

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Deposits

RECENT COAL DISCOVERIES IN KUZBASS -- Tashkent, Pravda Vostoka, 22 Mar 60

The Kuznetsk Basin is called the richest underground storehouse of useful coal deposits. Its chief wealth consists of coking coal which is supplied to metallurgists of the Urals and Siberia.

Geologists have recently discovered the Nikitinskiy deposit of coking coal which extends for tens of kilometers and is located near Léninsk-Kuznetskiy. This deposit which is now being exploited contains more than one billion tons of fat coal.

IRKUTSK GEOLOGISTS MAKE NEW COAL DISCOVERIES -- Riga, Sovetskaya Latviya, 19 Feb 60

Irkutsk geologists have explored the Karantsayskiy coal deposits, 20 km south southwest of the Transsiberian Railroad, in the vicinity of the Kuytun and Kimil'tey stations. Revised data list the reserves at 3 billion tons. The Cheremkhovo deposit, which is at present the main mining center of the Irkutsk basin, has only 500 million tons of industrial coal reserves.

Most of the seams of the new deposit are almost horizontal and are shallow enough to be worked by the open-pit method.

LIGNITE DEPOSITS EXTRACTED IN OPEN PIT -- Moscow, Ugol' No 3, Mar 60, p 18

The Kimovski open pit mine was planned on the basis of the Vostochno-Lyutoricheskiy and Kropotovskiy lignite deposits located in Kimovski Rayon of Tul'skaya Oblast.

Industrial reserves of coal for all sectors of the pit amount to 57.4 million tons. From 2 to 8.8 tons of overburden must be removed for each ton of coal extracted. At present, the active yearly capacity of the Kimovski pit is 1.1 million tons.

Costs

PRODUCTION COST OF KUZBASS COAL -- Kuznetskiy Ugol'nyy Bassey'n (The Kuznetsk Coal Basin), Handbook, Moscow, 1959, pp 327-328

CPYRGHT The production cost of coal in the Kuzbass is approximately two thirds that of the Donbass and about half that of the Pechora Basin. At the same time it is somewhat higher than the cost of coal in the Karaganda and the Irkutsk Basin.

In 1950, the production cost per ton of coal was 71.59 rubles for the Kuzbassugol Combine, but by 1957, it was 56.62 rubles, a reduction of 20.9 percent for the entire combine.

A number of trusts produced coal at higher rates than the average and a number at lower rates. The first unit of Polysayevskaya-Severnaya Hydraulic Mine had a production cost of 38.03 rubles per ton. For the open-pit mines, the cost ranged between 20 and 35 rubles per ton.

Production

PLANNED OUTPUT OF UZBEK MINES -- Tashkent, Pravda Vostoka, 19 Feb 60

CPYRGHT Uzbekistan is resolved to increase the output of the Angren Open Pit Mine to 5 million tons of coal per year by 1965, and in 1961, to raise the production of the Shargun'skiy drift mines to their planned capacity of 500,000 tons per year.

Labor Productivity

UZBEKUGOL' WORKERS STEP UP EFFICIENCY -- Tashkent, Pravda Vostoka, 16 Mar 60

CPYRGHT Labor productivity of the Uzbekugol' Combine workers who are employed directly in coal extraction has increased 7 percent above 1959 and production costs have decreased.

Coal Processing

RADIOMETRIC METHOD DEVELOPED FOR CLEANING COAL -- Moscow, Promyshlennno-Ekonomicheskaya Gazeta, 6 Mar 60

CPYRGHT The separation of lumps of waste rocks from coal in coal-preparation mills has been done manually. Now specialists of the Scientific Research Institute of Fuel Deposits of the Academy of Sciences USSR have developed a radiometric method for cleaning coal. The first instrument which operates on this principal, a radiometric separator, has been created. Thulium-170 is used as the isotope.

According to preliminary estimates, the automatic removal of rock by the radiometric method will free more than 40,000 persons for other work, with an annual saving of almost 500 million rubles.

New Coal Mines

FIRST KAZAKHSTAN HYDRAULIC MINE PLANNED -- Riga, Sovetskaya Latviya, 10 Mar 60

CPYRGHT The plan for the first hydraulic mine complex in Kazakhstan has been worked out by the Karagandagiproshakht Institute [Karaganda State Institute for the Planning of Mine Construction in the Coal Industry?]. The new enterprise is estimated to have a yearly output of 2.7 million tons of coal. Thick seams of coking coal will be worked by water under pressure. The first unit of the project will include a hydraulic mine and a large coal-preparation mill.

MINES UNDER CONSTRUCTION -- Moscow, Stroitel'naya Gazeta, 20 Mar 60

CPYRGHT The Kadiyevpodzemshakhtostroy Trust [Kadiyevka Trust for the Construction of Underground Mines?] is working on two mines, the Lutuginskaya Severnaya and the Krasnopol'ye Glubokoye, which will have a total capacity of 1.1 million tons of coking coal per year. Before the mines are put into operation, it will be necessary to cut 13,000 linear meters of mine workings.

NEW MINE IN SOUTHERN URALS -- Moscow, Promyshlennno-Ekonomicheskaya Gazeta, 17 Feb 60

CPYRGHT The surface structures of a new coal mine, Kullyarskaya No 3, have been built near the young miners settlement of Krasnogorskiy in Chelyabinskaya Oblast. This is the first mine of the Seven-Year Plan in the southern Urals.

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They new mine is supplied with all the most up-to-date machinery and equipment. Its planned capacity is 1,500 tons of coal per 24 hours.

NEW TULA MINES -- Chita, Zabaykal'skiy Rabochiy, 15 Jan 60

Lipkovskiy Mine No 12, with an estimated output of 1,000 tons of coal per 24 hours, has been added to the active enterprises of the Talaugol' Combine. Another new mine of the Combine is Mine No 3 which is working the Severo-Stalinogorskiy coal deposit and which has a yearly capacity of 300,000 tons of coal.

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IV. FERROUS METALLURGY

Production

AZERBAYDZHAN INCREASES STEEL PRODUCTION -- Baku, Bakinskiy Rabochiy, 10 Mar 60

In 1959, Azerbaydzhan produced 472,400 tons of steel, which was 41.1 times as much as in 1928.

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Mining

OPEN-PIT MINING IN KURSK MAGNETIC ANOMALY -- Moscow, Pravda, 11 Apr 60

Open-pit mining operations are under way at the Mikhaylovskiy mine complex in the Kursk Magnetic Anomaly. In this mine complex alone, the iron ore reserves are estimated at hundreds of millions of tons.

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Ore Concentration

EFFECTIVE METHOD OF CONCENTRATING FIBROUS ORES -- Moscow, Metallurg, No 3, Mar 60, p 3

Although the Kerch' iron ore basin is among the largest deposits of the world, its reserves of cheap limonite have been relatively little exploited up to now because of the lack of an effective method of concentrating the fibrous ores which make up about 80 percent of all the reserves, and because of the presence of arsenic, which limits variety in rolled stock.

A study of concentrating fibrous ores has indicated that a magnetizing roasting with a subsequent magnetic concentration is the only effective method of preparing these ores, since the arsenic content is considerably reduced during the process of concentration.

During the first industrial roasting-magnetic concentration of fibrous ores, conducted at the concentrating mill of the Sibelektrostal' Plant with the participation of the Institute of Ferrous Metallurgy of the Academy of Sciences Ukrainian SSR, the iron content was increased from 37 percent to 51-52 percent and the arsenic content was cut in half.

CPYRGHT

Coke Quenching

COKE QUENCHED BY DRY METHOD -- Moscow, Promyshlennno-Ekonomicheskaya Gazeta, 19 Feb 60

CPYRGHT An original, automatic, experimental industrial installation for the dry quenching of coke, developed by Khar'kov designers, has been put into operation at the Cherepovets Metallurgical Plant. The coke, quenched by inert gases instead of water, does not contain moisture which impairs its quality. Besides, the gases, which become hot when they are blown through the incandescent coke, can be utilized by the fuel installations of the enterprise.

Blast Furnaces

YENAKIYEVO PLANT TO ACQUIRE NEW BLAST FURNACE -- Moscow, Stroitel'naya Gazeta, 28 Feb 60

CPYRGHT A new and larger blast furnace will be built and put into operation by 1 October 1960 at the Yenakiyevo Metallurgical Plant in Stalinskaya Oblast in place of an old one which is to be demolished. Blast furnaces builders have already arrived at the site.

BLAST FURNACE UNDER CONSTRUCTION AT ALCHEVSK PLANT -- Moscow, Stroitel'naya Gazeta, 28 Feb 60

CPYRGHT A large blast furnace is being built at the Alchevsk Metallurgical Plant. Komsomols of the Donbass have declared the construction to be of top importance and have determined to complete the work 15 days ahead of schedule so as to produce the first pig iron in September.

ZAPOROZH'YE BLAST FURNACE OPERATORS ACHIEVE HIGH COEFFICIENT -- Kiev, Pravda Ukrainy, 3 Mar 60

CPYRGHT Operators of a blast furnace at the Zaporozh'ye Metallurgical Plant have achieved a coefficient of 0.698 in the utilization of the working volume of their blast furnace. This was the best coefficient in the Ukraine. The blast furnace shop average was 0.748.

Open-Hearth Furnaces

NIZHNIY TAGIL COMBINE CONSTRUCTS NEW OPEN-HEARTH FURNACE -- Moscow, Sovetskaya Rossiya, 20 Feb 60

CPYRGHT A new, large-capacity open-hearth furnace is under construction at the Nizhniy Tagil Metallurgical Combine.

All the heat processes of the new furnace will be automatically controlled. The furnace will be put into operation in August 1960.

NIZHNIY TAGIL FURNACES ACHIEVE HIGH RECORD -- Leningradskaya Pravda, 22 Mar 60

CPYRGHT Four new all-union and world records were established during the past 24 hours by steelworkers of the first open-hearth furnace shop of the Nizhniy Tagil Metallurgical Combine. Operating large-capacity furnaces with the use of oxygen, they produced 85 percent of the heats by high speed methods developed by innovators of the enterprise, averaging 8 hours and 50 minutes per heat as against a planned 10 hours and 24 minutes. The furnaces yielded 1,535 tons of above-plan steel, and 13.41 tons of metal was produced for every square meter of hearth area.

Rolling Mills

CHEREPOVETS ROLLING MILL UNDER CONSTRUCTION -- Moscow, Promyshlennno-Ekonomicheskaya Gazeta, 20 Mar 60

CPYRGHT The 1700 rolling mill now under construction at the Cherepovets Metallurgical Plant will be completed by the end of April 1960 and will be the first of several new planned units to be put into operation.

ZAPORZHSTAL' RENOVATES ROLLING MILL SHOPS -- Moscow, Promyshlennno-Ekonomicheskaya Gazeta, 21 Feb 60

CPYRGHT The Zaporozhstal' Metallurgical Plant is busily engaged in developing its rolling mill shops. New equipment is being installed and a 1700 mill and other aggregates are being assembled.

A great volume of construction and assembly work is being completed in the sheet mill shop where a new section is being created for preparing stainless steel sheet. This will permit the metallurgists to raise their production of stainless steel sheet 50 percent.

USSR ROLLING MILL CONSTRUCTION -- Moscow, Promyshlennno-Ekonomicheskaya Gazeta, 26 Feb 60

During the first year of the Seven-Year Plan, seven large rolling mills were put into operation in the USSR. These included a slabbing mill at the Magnitogorsk Combine, blooming and sheet mills at the Cherepovets Metallurgical Plant, and a heavy section mill at the Nizhniy Tagil Metallurgical Combine.

In 1960, the USSR plans to build six more rolling mills, including the first unit of a 2500 continuous sheet mill at the Magnitogorsk Combine, a 2800 plate mill at the Orsk-Khalilovo Metallurgical Combine, and the first unit of a shop for the cold rolling of electric steel at the Novo-Lipetsk Metallurgical Plant. Construction of all six aggregates has already been started. In one year they will produce almost 50 percent more rolled stock than was produced in Russia in 1913.

TEST RUN OF NEW MILL -- Moscow, Stroitel'naya Gazeta, 30 Mar 60

Cold testing of the 2800 plate mill has started at the Orsk-Khalilovo Metallurgical Combine.

ORSK KHALILOVO ROLLING MILL PRODUCES FIRST ROLLED STOCK -- Moscow Pravda, 31 Mar 60

The 2800 rolling mill, the largest in Europe, at the Orsk-Khalilovo Metallurgical Combine has issued its first rolled stock. The new shop is a multiwing building with a great number of complicated aggregates and mechanisms, stretching out for almost a kilometer. All its production processes are mechanized and automated.

Metallurgical Equipment

MAKES ROTATING FURNACES -- Kiev, Pravda Ukrainy, 11 Feb 60

The Zhdanov Heavy Machine Building Plant is making a rotating furnace for reducing magnetic roasting of oxydized iron ore. It is 50 meters long and 3.6 meters in diameter.

This is the first furnace of this type produced in the USSR, and it is intended for the Krivoy Rog Basin.

Another such furnace will be made for the Kerch' iron ores.

ELEKTROSTAL' PLANT -- Alma-Ata, Kazakhstanskaya Pravda, 19 Feb 60

CPYRGHT

The Elektrostal' Heavy Machine Building Plant has recently completed two 3-ton manipulators for the Kuybyshevskiy Sovnarkhoz.

The plant has also produced a powerful feeder, a crusher, and other equipment for the ore-mining industry.

V. NONFERROUS METALLURGY

Aluminum

EFFICIENCY OF STALINGRAD ALUMINUM PLANT JUDGED LOWER THAN OTHERS -- Moscow, Promyshlennno-Ekonomicheskaya Gazeta, 16 Mar 60

To attain its goal of producing 2.9 times as much aluminum in 1965 as it did in 1958, the Stalingrad Aluminum Plant must put into operation the second section of its plant.

Whereas similar plants in the USSR operate at an electric current efficiency of 84-91 percent in aluminum production and yield 60-63 grams of metallic aluminum per kilowatt-hour, in 1959 the Stalingrad Aluminum Plant averaged a current efficiency of only 77.5 percent and produced 52.5 grams of aluminum per kilowatt-hour. The plant consumes 3.5 times as much fluoride and 300 km more anodes per ton of produced aluminum than similar plants in the USSR.

SUMGAIT ALUMINUM PLANT EXPANDS PRODUCTION CAPACITY -- Baku, Bakinskiy Rabochiy, 23 Mar 60

The fourth building of the Sumgait Aluminum Plant has put into operation a number of electrolytic cells ahead of schedule, and production of aluminum has been started in the new building.

KAOLIN TO BE USED AS ALUMINA SOURCE -- Tashkent, Pravda Vostoka, 19 Mar 60

A number of industries will be created in Angren to produce aluminum, cement, rare metals, and articles made of ceramic and refractory materials.

A mineral deposit covering an area of about 60 sq km in the Angren industrial and mining area contains coal, kaolin, and rare and dispersed metals, as well as raw material for the production of construction materials. The deposit, discovered in 1932, has been mined for coal exclusively, but conditions now permit the creation in Angren of an extensive aluminum, cement, ceramic, and refractory industry.

Aluminum can be recovered from kaolin, which contains 20-35 percent aluminum oxide, and the means for doing so are available. The best method of obtaining alumina is by sintering concentrated kaolins with limestone, which is abundant in Angren.

CPYRGHT

A large-scale cement plant can be constructed in Angren to utilize the by-products of alumina production. Such a plant will produce cement at a cost of one half to one fourth that of existing enterprises.

LOW-GRADE SILICATE ORES USED TO PRODUCE ALUMINUM -- Moscow, Promyshlenno-Ekonomicheskaya Gazeta, 16 Mar 60

Technical and economic estimates were made by a number of institutes in regard to the relative efficiency of the electrothermal and the electrolytic methods of aluminum production. The results obtained by Giproyuminiy [State Institute for the Planning of Aluminum, Magnesium, and Electrode Plants], VAMI [All-Union Aluminum-Magnesium Institute], and the Kola affiliate of the Academy of Sciences USSR revealed that the electrothermal method of producing aluminum from aluminum-silicate raw material, as compared with the electrolytic method, reduces the consumption of electric power about 7-13 percent, increases labor productivity 20-40 percent, decreases production costs 15-25 percent, and reduces capital investments 30-40 percent.

Concentrates containing at least 55 percent alumina, with a small admixture of iron oxides and titanium not exceeding 1.5-2.0 percent, are used as raw material for producing aluminum by the electrothermal method. Such concentrates can be obtained from the kyanite ores of the Kyvskiy deposits in the Kola Peninsula, from the sillimanite ores of the Kigoyvskiy Deposit in Irkutskaya Oblast, and from other sources.

PLANT BEING CONSTRUCTED TO PROCESS NEPHELINE ORES -- Moscow, Promyshlenno-Ekonomicheskaya Gazeta, 20 Mar 60

Rich deposits of nepheline ores, used as raw material by the aluminum industry, are concentrated in the northern part of the Kuzentskiy Altai Mountain Range. A large-scale plant is under construction in Achinsk which will produce alumina from these ores.

Copper

NEW DEPOSITS TO INCREASE COPPER PRODUCTION -- Moscow, Promyshlenno-Ekonomicheskaya Gazeta, 6 Mar 60

The Gay Ore-Concentrating Combine will increase its output of copper as a result of recently discovered deposits of copper ores in Orenburgskaya Oblast.

CPYRGHT

The combine will mine ore both by the open-pit and the underground systems of mining. The open-pit system will be initiated in 1962-1963, for which 45 million cu m of overburden must be removed.

The combine now has about 4,500 qualified construction workers and miners.

The volume of capital investment in 1960 will be 1.8 times that of 1959 and overburden removal will more than triple the 1959 figure. Within one year, two principle and two exploratory-production shafts will be sunk. This combine will be the first in the copper industry to use rotary excavators with a capacity of 1,000 cu m per hour.

Molybdenum

HYDROMETALLURGICAL PLANT UNDER CONSTRUCTION IN NAL'CHIK -- Moscow, Promyshlennno-Ekonomicheskaya Gazeta, 2 Mar 60

A hydrometallurgical plant under construction in Nal'chik will obtain its raw material from the Tyrny-Auz Tungsten-Molybdenum Deposit. The new enterprise will begin production in the fourth quarter of 1960.

The plant will recover molybdenum from tungsten concentrates which contain oxidized molybdenum and will process the concentrates in autoclaves with a soda solution, under pressure of 25 atmospheres at a temperature of 225° centigrade.

Titanium

TITANIUM REPLACING TUNGSTEN IN ELECTRIC FILAMENTS -- Moscow, Sovetskiy Flot, 10 Oct 59

The recovery of titanium, which appears in the earth's crust in the form of ilmenite and rutile, had long been unsuccessful until the appearance of a new method of smelting metals in a high vacuum.

Successful experiments were conducted in which filaments were made from titanium for use in electric bulbs and electrical equipment. Possessing a high melting point, high electrical resistance, and good emissive power, filaments made of titanium are beginning to replace those made of tungsten.

CPYRGHT

The Institute of Machine Studies of the Academy of Sciences USSR has developed a method for obtaining extremely hard alloys of titanium and cobalt. These alloys are now being used increasingly in plants producing cutting tools.

Ore Processing

TANTALUM, NIOBIUM PROCESSED FROM LOW-GRADE SOURCES -- Alma-Ata, Izvestiya Akademii Nauk Kazakhskoy SSR, Seriya Metallurgii, Obogashcheniya i Ogneuporov, No 1 (4), Sep 59, p 3

The growing need for tantalum and niobium necessitates processing ores and concentrates with a low content of these metals. However, there is great difficulty in processing such raw material with existing technology.

Methods for the extraction and separation of tantalum and niobium have been proposed in recent years; the one which deserves most attention is the method of liquid with organic solvents.

This method possesses essential advantages, chief of which are the following: small surface area of phase separation and absence of solid residues, which easily permits separation of even traces of the elements; the possibility of utilizing a continuous processing method; and the small size of equipment and apparatus with comparatively high-production capacities.

POLYMETALS COMBINE TO PROFIT FROM COMPLEX CONCENTRATION METHOD -- Frunze, Sovetskaya Kirgiziya, 17 Mar 60

In addition to lead, zinc, and gold, geologists of the Kirgiz SSR have discovered in the Kuraminskiy Mountain Range large deposits of pyrites and ore containing both iron and copper.

The method of complex concentration, tested in the concentration mill of the Altyn-Topkan Polymetals Combine, will permit the retention of valuable accompanying minerals in the concentrates.

Gold Recovery

WIDER USE OF DREDGES IN GOLD PRODUCTION -- Irkutsk, Vostochno-Sibirskaya Pravda, 6 Apr 60

CPYRGHT

In 1960, the Lenzoloto Trust will process over 20 percent more placer deposits by the use of dredges than it did in 1959. The 1960 production plan calls for the continuous washing of sand in sluices. Sand delivery in underground mining will increase 7 percent and sand removal during drift operations will increase 9 percent in 1960 as a result of increased mechanization.

In 1961, the high-voltage lines from the Makanskaya Hydroelectric Station will provide the trust with power for its electric dredges, hydraulic equipment, and other mechanisms.

PLANS POWERFUL NEW GOLD DREDGE -- Moscow, Moskovskaya Pravda, 10 Feb 60

CPYRGHT

The Moscow Central Scientific Research Institute for Mineral Prospecting is participating in developing plans for a powerful gold dredge equipped with 600-liter buckets. It will be 240 meters long and 50 meters wide and will weigh 7,500 tons.

Moscow, Promyshlennno-Ekonomicheskaya Gazeta, 7 Feb 60

CPYRGHT

The Irkutsk Heavy Machine Building Plant is completing plans for a new superpowerful dredge designed for the Lena gold fields. It will be equipped with 600-liter buckets and with remote mechanical and automatic controls. The new machine will be capable of dredging at a depth of 50 meters.

However, the plant's experimental base is not adapted for this type of work and there are few designers working on the dredge. Therefore, the plant management decided to enlist the cooperation of special scientific research institutes in the development of plans for the dredge. The design bureau of the plant is being equipped with computers and other machines.

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